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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,189	08/30/2001	David L. Morris	P-7764.006	8496

7590

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EXAMINER

WIGGINS, JOHN DAVID

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 04/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/943,189

Applicant(s)  
David L. Morris

Examiner  
David J. Wiggins

Art Unit  
2856



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on August 30, 2001 [Application submitted for US PTO patent]
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 26, 27, 38, and 46-49 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 11, 13-15, 20, 22, 24, 25, 28, 29, 36, 37, 39-43, and 45 is/are rejected.
- 7) ☒ Claim(s) 3, 6-10, 12, 16-19, 21, 23, 30-35, and 44 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Aug 30, 2001 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 04 6) ☐ Other:

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**Part III DETAILED ACTION**

**Examiner's Office Action**

***Drawings***

1. *This application has been filed with formal drawings which have been judged acceptable on their technical merit by the Examiner, while also judged to possess acceptable quality for meeting drawing requirements of any Patent Drawing Review to be done by a US PTO draftsman after the 08/30/2001 filing date.*

***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
3. The disclosure is objected to because of the following informalities:

On Page 33, claim 48, line 4; after the word "surface", please consider inserting the following phrase:

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--- having a non-reduced diameter ---

On Page 25, claim 14, line 01; after the word "surface", please consider inserting the following term:

--- on said disposeable coupon ---

On Page 29, claim 34, line 03; after the words "hollow tube", please consider inserting the following term:

--- to form a biconical or dual step tapered zone ---

On Page 33, claim 48, line 03; after the words "central portion", please consider inserting the following phrase:

--- in a tapered zone ---

Appropriate correction is requested or required.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention

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were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

5. Claims 1-2, 4-5, 11, 13, 14, 15, 20, 22, 24, 28-29, 37, 39, 40-43 and 45 are rejected under 35 U.S.C. § 103 as being unpatentable over Morris, R. et al., in view of Hall, R. et al., in view of [Smith, K. et al. or John, R.].

The prior art of Morris et al. teaches using a heated metal tube (coupon) and an optical light reflection type of tube inspection in a fuel residue deposit measuring apparatus that covers most features of the instant invention except for (1) explicitly having a burnished surface finish; and except for (2) having the coupon or tubular coupon for deposit collection be disposeable; and except for (3) visually inspecting the occurrence of deposit formation onto the heated surfaces. However, the prior art of Hall et al. discloses the concept of inspecting a surface for deposits formation by observation; i.e.- visual observation. It would have been obvious to one of ordinary skill in the art to consider detecting & noting a residue, deposit or film onto a smooth metal surface by eyeball observation since such films are subjectively apparent because of a gradual change in light luster, brightness or light reflectance level or apparent tint (as in dulling color or tarnish shading)

*patina  
on  
copper  
or  
brass*

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as the oxidized covering of different material grows over the smooth metal surface. Also, this primary reference of Morris et al. does illustrate a flat/smooth reflective surface and a flat/smooth metal surface via their Figure 2- which features would serve to provide a highly reflective tube surface (in light of their disclosed measuring principle/method that involves interfering incident & reflecting light paths to form fringes of light intensity maxima and minima). It is Notoriously Old and Well Known for a metal surface to be burnished [polished to a shiny appearance with high light reflectivity] because of the usual desire to achieve a very smooth surface finish; metals are commonly fabricated into bodies with shiny silver-like or mirror like reflectance. It is a physical property of such machine-polished surfaces with low mean surface roughness to reflect an incident coherent light beam without much degradation of optical coherence (in such specular reflection, the phase and amplitude of the light beam remain correlated along the spatial direction of beam travel). Likewise, it is Notoriously Old and Well Known for a metal surface to be work hardened [mechanically handled and force loaded] in order to obtain a broken-in metal of good malleability that's not too brittle & not too ductile in its material properties. Likewise, it is Notoriously Old and Well

*polished*

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Known for a new metal surface to possess an unscratched surface finish because of the desire to produce a quality body with a smooth surface; many commercial markets and engineering applications require a smooth or flat surface in order to reduce friction or promote flow (and smooth surfaces are inherently free of scratches). Such features of a metal surface are consistent with everyday surface fabrication & preparation practices such as sintering, sandblasting, etching and annealing. The disposable aspect of these fluid exposure coupons is taught by Smith et al. via their twelve stainless steel coupons that are installable into a receiving tray having twelve receiving chambers [such coupons being cleaned, rinsed & dried before their installation] where it is inherently clear that such installable coupons are evidently removeable, and something as cheap costwise as a stainless steel plate exposed to a biofilm or contamination is clearly inherently disposable- such matters are considered arbitrary and largely a matter of design choice for the skilled environmental or materials science artisan because there is no better test exposure coupon than a new virgin coupon having surfaces clean & free from diffused pre-deposits, oxidation and prior chemical interactions/reactions [please see Smith et al. at their Figures 1, 3 & 4 together with Column 6, line 21 - Column

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8, line 20 for relevant details]. Likewise, this disposeable aspect is taught by John via his dirty oil testing card [spot 12 on disc card 11 in Figure 1 thereof] that is clearly inherently replaceable/disposeable in order to test subsequent samples of other dirty engine oil (crankcases).

***Allowable Subject Matter***

6. Claims 3, 6-10, 12, 16-19, 21, 23, 25, 30-35, 36 and 44 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claims 26-27, 38, 46-47 and 48-49 are allowable over the prior art of record.

8. The following is an Examiner's statement of reasons for the indication of allowable subject matter: The prior art fails to disclose a method and apparatus for measuring and evaluating the thermal characteristics of fuels /combustible hydrocarbons in a testing machine using disposeable coupons, where the coupons have a ***central portion with substrate onto***



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*which are deposited partially oxidized fuel degradation products; where a burnished surface finish on the central portion facilitates visual inspection* and rating of the fuel degradation product deposits [or where such central portion has a *surface finish characterized by microscopic ridges and valleys---* with such ridges being smeared into the valleys on the coupon]; where such systems include the further features of the objected to claims 3, 6-10, 12, 16-19, 21, 23, 25, 30-35, 36 and 44.


9. The following is an Examiner's statement of reasons for allowance: The prior art fails to disclose a method and apparatus for measuring and evaluating the thermal characteristics of fuels /combustible hydrocarbons in a testing machine using disposeable metal coupons or cylindrical tubes or raw heater tubes, where the coupons or tubes have a *central portion with substrate onto which are deposited partially oxidized fuel degradation products;* where the central portion has a *surface finish characterized by microscopic ridges and valleys---* with the ridges being smeared into or displaced into the valleys on the coupon to

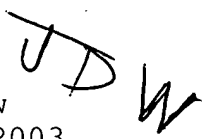
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11. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to J. David Wiggins whose telephone number is (703) 305-4884. The Examiner can normally be reached on Monday to Friday from 9AM to 7PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Hezron E. Williams, can be reached on (703) 305-4705. The fax phone number for this Group is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose telephone number is (703) 305-4900.

  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

  
WIGGINS/jdw  
April 04, 2003